

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A diversity receiver for receiving a desired radio signal on a radio channel, said diversity receiver comprising:

a first receiving branch having associated thereto a first antenna element for receiving a first signal;

at least a second receiving branch having associated thereto a second antenna element for receiving a second signal;

first means for obtaining, from a—the first signal on the first receiving branch and a—the second signal on the second receiving branch, a third signal representing an estimation of a spatial derivative of at least one receiving channel parameter;

second means for processing the third signal to obtain a fourth signal;

third means for processing the first signal to obtain a fifth signal; and

fourth means for combining the fourth signal and the fifth signal to obtain an output signal, said output signal forming the desired radio signal;

wherein the third signal is used to cancel or at least reduce signal distortions that occur due to time-variations of the receiving channel.

2. (Currently Amended) The diversity receiver according to claim 1, wherein the first antenna element and the second antenna element are closely spaced and arranged behind each other in the direction of motion (v) of the diversity receiver.

3. (Currently Amended) The diversity receiver according to claim 1, wherein the first means ~~obtain~~ obtains the third signal as a difference between the first signal and the second signal.

4. (Previously Presented) The diversity receiver according to claim 1, wherein the third signal is interpreted as a temporal derivative of the at least one receiving channel parameter, at least when the diversity receiver is moved.

Claim 5 (Canceled)

6. (Previously Presented) The diversity receiver according to claim 1, wherein one or more of the first means, the second means, the third means, and the fourth means are fully or in part realized by hardware interacting with software or by discrete components.

7. (Previously Presented) The diversity receiver according to claim 1, wherein the second means perform one or more of the following functions: filtering, sampling, A/D-conversion, serial-to-parallel conversion, multiplying with a ramp function, (Fast)

Fourier Transforming, multiplying with a crosstalk matrix, and signal weighting.

8. (Previously Presented) The diversity receiver according to claim 1, wherein the second means perform a signal weighting function comprising a multiplication with a weighting factor (\bullet ; d/v) controlled to minimize the signal distortions.

9. (Previously Presented) The diversity receiver according to claim 1, wherein the third means perform one or more of the following functions: filtering, sampling, A/D-conversion, serial-to-parallel conversion, and (Fast) Fourier Transforming.

10. (Original) The diversity receiver according to claim 1, wherein the at least one receiving channel parameter is a receiving channel transfer function.

11. (Currently Amended) The diversity receiver according to claim 1, wherein said diversity receiver further comprises for creating a virtual third antenna element there are provided switching means for switching from a signal on the first receiving branch to a corresponding signal on the second receiving branch thereby creating a virtual third antenna element.

12. (Previously Presented) The diversity receiver according to claim 1, wherein the first antenna element and the second antenna

element are arranged in parallel but extend in different directions.

13. (Original) The diversity receiver according to claim 1, wherein the diversity receiver is adapted to be used in one or more of the following systems: Orthogonal Frequency Division Multiplexing (OFDM) systems, Digital Audio Broadcasting (DAB) systems, Digital Video Broadband (DVB) systems, for example DVB-T systems, Digital Terrestrial Television Broadcasting (DTTB) systems, Code Division Multiple Access (CDMA) systems, for example cellular CDMA systems, Universal Mobile Telecommunications Systems (UMTS), the Global System for Mobile communications (GSM), Digital Enhanced Cordless Telecommunication (DECT) systems, wireless local area network systems, for example according to the standard 802.11a, 802.11g, or HIPERLAN II.

14. (Currently Amended) A method for canceling or at least reducing signal distortions of a ~~first signal and a second signal~~ ~~desired radio signal~~ received by a moving diversity receiver, wherein the signal distortions occur due to time-variations of a receiving channel in a radio system, said method comprising the acts of:

receiving ~~the~~ ~~a~~ first signal on a first receiving branch having associated thereto a first antenna element;

receiving ~~the~~ ~~a~~ second signal on a second receiving branch having associated thereto a second antenna element;

obtaining, from the first signal and from the second signal, a third signal representing an estimation of a spatial derivative of at least one receiving channel parameter;
processing the third signal to obtain a fourth signal;
processing the first signal to obtain a fifth signal; and
combining the fourth signal and the fifth signal to obtain an output signal forming the desired radio signal.

15. (Previously Presented) The method according to claim 14, wherein the act of estimating the spatial derivative comprises calculating a difference between the radio signal received at a first position of said two closely spaced positions and the radio signal received at a second position of said two closely spaced positions.

16. (Currently Amended) A computer readable medium embodying a computer program, comprising instructions for canceling or at least reducing signal distortions of a ~~first signal and a second signal~~ desired radio signal received by a moving diversity receiver, the instructions when executed by a processor are configured ~~for~~ to:
receive the ~~a~~ first signal on a first receiving branch having associated thereto a first antenna element;
receive the ~~a~~ second signal on a second receiving branch having associated thereto a second antenna element;

obtain, from the first signal and from the second signal, a third signal representing an estimation of a spatial derivative of at least one receiving channel parameter;

process the third signal to obtain a fourth signal;

process the first signal to obtain a fifth signal; and

combine the fourth signal and the fifth signal to obtain an output signal... forming the desired radio signal.

Claim 17 (Canceled)

18. (Currently Amended) A diversity receiver for receiving a desired radio signal on a radio channel, said diversity receiver comprising:

a first antenna configured to receive a first signal on a receiving channel;

a second antenna configured to receive a second signal on the receiving channel;

a first combiner configured to form a third signal from the first signal and the second signal;

a first processing unit configured to process the third signal to obtain a fourth signal;

a second processing unit configured to process the first signal to obtain a fifth signal; and

a second combiner configured to combine the fourth signal and the fifth signal to obtain an output signal forming the desired radio signal;

wherein the third signal represents an estimation of a spatial derivative of at least one receiving channel parameter, and wherein the third signal is used to reduce signal distortions that occur due to time-variations of the receiving channel.

19. (Currently Amended) The diversity receiver of as claimed in claim 18, wherein the first combiner is configured to form the third signal from the first signal and a difference signal, the difference signal being a difference between the first signal and the second signal.

20. (Currently Amended) The diversity receiver of as claimed in claim 19, wherein said diversity receiver further comprising comprises a weighting unit configured to multiply the difference signal with a factor that depends on at least one a speed of the diversity receiver and a distance between the first antenna and the second antenna.

21. (Currently Amended) The diversity receiver of as claimed in claim 19, wherein said diversity receiver further comprising comprises a decorrelator configured to decorrelate the difference signal and the third signal and compute a weighting factor for weighting the difference signal.

22. (Currently Amended) The diversity receiver of as claimed in claim 19, wherein said diversity receiver further comprising

comprises a multiplier configured to multiply the difference signal with a linearly increasing ramp function.